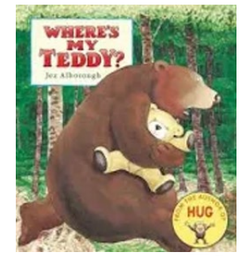
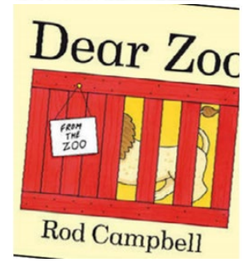
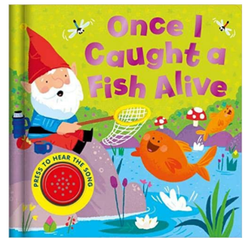
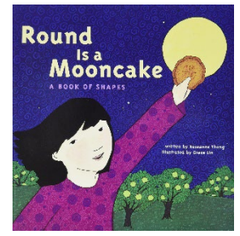
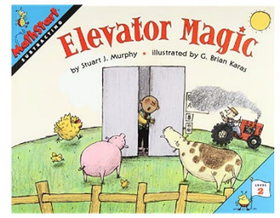
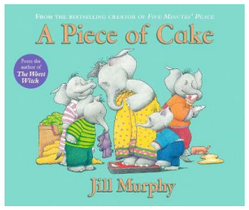
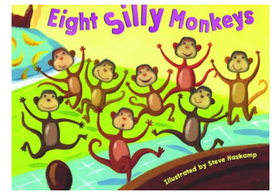
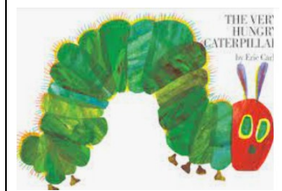
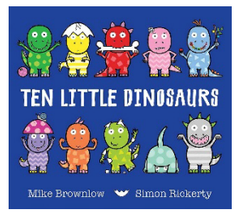
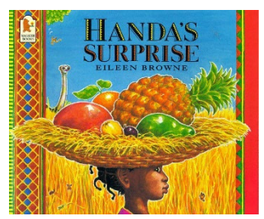
EPA Reception Maths Long Term Plan

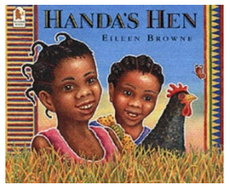
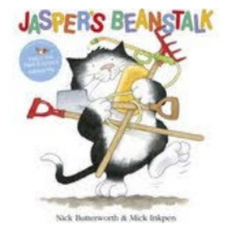
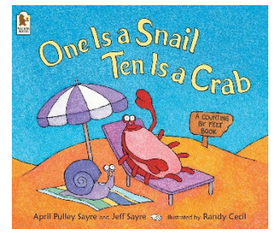
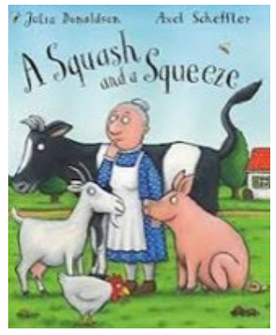
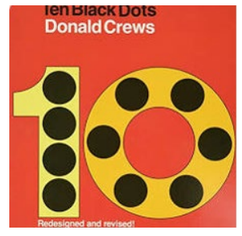
Term	Birth to 5: Expected Progress and Outcomes (end of the term)	Taught concepts: Mastering Number (Adult-led learning sessions Monday to Thursday)				Shape, Space and Pattern (Adult-led learning sessions on Fridays)	Assessment Milestones	Reading Across the Curriculum (Books to support mathematical understanding)
		Subitising	**Cardinality, ordinality and counting**	**Composition**	**Comparison**			
Term 1	**Range 4 and 5** (24 – 48 months old: 4 years old) ***Range 4:*** **Comparison** ○ Beginning to compare and recognise changes in numbers of things, using words like more, lots or 'same' **Counting** ○ Begins to say numbers in order, some of which are in the right order (ordinality) **Cardinality (How many?)** ○ In everyday situations, takes or gives two or three objects from a group ○ Beginning to notice numerals (number symbols) ○ Beginning to count on their fingers. **Spatial Awareness** ○ Moves their bodies and toys around objects and explores fitting into spaces ○ Begins to remember their way around familiar environments ○ Responds to some spatial and positional language ○ Explores how things look from different viewpoints including things that are near or far away **Shape** ○ Chooses puzzle pieces and tries to fit them in ○ Recognises that two objects have the same shape ○ Makes simple constructions **Pattern** ○ Joins in and anticipates repeated sound and action patterns ○ Is interested in what happens next using the pattern of everyday routines **Measures** ○ Explores differences in size, length, weight and capacity ○ Beginning to understand some talk about immediate past and future ○ Beginning to anticipate times of the day such as mealtimes or home time ***Range 5:*** **Comparison** ○ Compares two small groups of up to five objects, saying when there are the same number of objects in each group, e.g. You've got two, I've got two. Same! **Counting** ○ May enjoy counting verbally as far as they can go	○ perceptually subitise within 3 ○ identify sub-groups in larger arrangements ○ create their own patterns for numbers within 4 ○ practise using their fingers to represent quantities which they can subitise ○ experience subitising in a range of contexts, including temporal patterns made by sounds.	○ relate the counting sequence to cardinality, seeing that the last number spoken gives the number in the entire set ○ have a wide range of opportunities to develop their knowledge of the counting sequence, including through rhyme and song ○ have a wide range of opportunities to develop 1:1 correspondence, including by coordinating movement and counting ○ have opportunities to develop an understanding that anything can be counted, including actions and sounds ○ explore a range of strategies which support accurate counting.	○ see that all numbers can be made of 1s ○ compose their own collections within 4.	○ understand that sets can be compared according to a range of attributes, including by their numerosity ○ use the language of comparison, including 'more than' and 'fewer than' ○ compare sets 'just by looking'	**Make simple patterns** • Children copy, continue and create their own simple repeating patterns. • Say the pattern aloud to help identify which part repeats and supports continuing the pattern. • Children should be given opportunities to explore AB patterns in a range of contexts including shapes, colours, sizes, actions and sounds. • Building patterns vertically and horizontally.	On Entry: • RBA CLF DATA Input – Baseline	  

	○ Points or touches (tags) each item, saying one number for each item, using the stable order of 1,2,3,4,5. ○ Uses some number names and number language within play, and may show fascination with large numbers ○ Begin to recognise numerals 0 to 10 **Cardinality** ○ Subitises one, two and three objects (without counting) ○ Counts up to five items, recognising that the last number said represents the total counted so far (cardinal principle) ○ Links numerals with amounts up to 5 and maybe beyond ○ Explores using a range of their own marks and signs to which they ascribe mathematical meanings **Composition** ○ Through play and exploration, beginning to learn that numbers are made up (composed) of smaller numbers ○ Beginning to use understanding of number to solve practical problems in play and meaningful activities ○ Beginning to recognise that each counting number is one more than the one before ○ Separates a group of three or four objects in different ways, beginning to recognise that the total is still the same **Spatial Awareness** ○ Responds to and uses language of position and direction ○ Predicts, moves and rotates objects to fit the space or create the shape they would like **Shape** ○ Chooses items based on their shape which are appropriate for the child's purpose ○ Responds to both informal language and common shape names ○ Shows awareness of shape similarities and differences between objects ○ Enjoys partitioning and combining shapes to make new shapes with 2D and 3D shapes ○ Attempts to create arches and enclosures when building, using trial and improvement to select blocks **Pattern** ○ Creates their own spatial patterns showing some organisation or regularity ○ Explores and adds to simple linear patterns of two or three repeating items, e.g. stick, leaf (AB) or stick, leaf, stone (ABC) ○ Joins in with simple patterns in sounds, objects, games and stories dance and movement, predicting what comes next **Measures** ○ In meaningful contexts, finds the longer or shorter, heavier or lighter and more/less full of two items ○ Recalls a sequence of events in everyday life and stories							

<u>Term 2</u>	**Range 4 and 5** (24 – 48 months old: 4 years old) See above.	**Subitising** ○ continue from first half-term ○ subitise within 5, perceptually and conceptually, depending on the arrangements.	**Cardinality, ordinality and counting** ○ continue to develop their counting skills ○ explore the cardinality of 5, linking this to dice patterns and 5 fingers on 1 hand ○ begin to count beyond 5 ○ begin to recognise numerals, relating these to quantities they can subitise and count.	**Composition** ○ explore the concept of 'wholes' and 'parts' by looking at a range of objects that are composed of parts, some of which can be taken apart and some of which cannot ○ explore the composition of numbers within 5.	**Comparison** ○ compare sets using a variety of strategies, including 'just by looking', by subitising and by matching ○ compare sets by matching, seeing that when every object in a set can be matched to one in the other set, they contain the same number and are equal amounts.	<u>2D Shapes</u> • Children learn that squares and rectangles have 4 straight sides and 4 corners. • Begin to recognise shapes in everyday items in the classroom and outside. • Identify and create squares and rectangles in a variety of different sizes and orientations • Children to be introduced to circles and triangles, (as above) • Children to continue exploration of AB patters using 2D shapes, (and various other materials within child-led learning)	• Consistently recognise and match numerals and quantities to 5 • Instantly recognise quantities up to 5 (subitise) • Use number names beyond 5, including some teens numbers • Can talk about some simple 2d and 3d shapes. CLF EYFS data input – Term 2	  

Term 3	Range 6 (48 months – 71 months: 4 years old – almost 6 years old) ***Beginning*** **Comparison** ○ Uses number names and symbols when comparing numbers, showing interest in large numbers ○ Estimates of numbers of things, showing understanding of relative size **Counting** ○ Enjoys reciting numbers from 0 to 10 (and beyond) and back from 10 to 0 ○ Increasingly confident at putting numerals in order 0 to 10 (ordinality) **Cardinality** ○ Engages in subitising numbers to four and maybe five ○ Counts out up to 10 objects from a larger group ○ Matches the numeral with a group of items to show how many there are (up to 10) **Composition** ○ Shows awareness that numbers are made up (composed) of smaller numbers, exploring partitioning in different ways with a wide range of objects ○ Begins to conceptually subitise larger numbers by subitising smaller groups within the number, e.g. sees six raisins on a plate as three and three ○ In practical activities, adds one and subtracts one with numbers to 10 ○ Begins to explore and work out mathematical problems, using signs and strategies of their own choice, including (when appropriate) standard numerals, tallies and "+" or "-" **Spatial Awareness** ○ Uses spatial language, including following and giving directions, using relative terms and describing what they see from different viewpoints ○ Investigates turning and flipping objects in order to make shapes fit and create models; predicting and visualising how they will look (spatial reasoning) ○ May enjoy making simple maps of familiar and imaginative environments, with landmarks **Shape** ○ Uses informal language and analogies, (e.g. heart-shaped and hand-shaped leaves), as well as mathematical terms to describe shapes ○ Enjoys composing and decomposing shapes, learning which shapes combine to make other shapes ○ Uses own ideas to make models of increasing complexity, selecting blocks needed, solving problems and visualising what they will build **Pattern**	**Subitising** ○ increase confidence in subitising by continuing to explore patterns within 5, including structured and random arrangements ○ explore a range of patterns made by some numbers greater than 5, including structured patterns in which 5 is a clear part ○ experience patterns which show a small group and '1 more' ○ continue to match arrangements to finger patterns.	**Cardinality, ordinality and counting** ○ continue to develop verbal counting to 20 and beyond ○ continue to develop object counting skills, using a range of strategies to develop accuracy ○ continue to link counting to cardinality, including using their fingers to represent quantities between 5 and 10 ○ order numbers, linking cardinal and ordinal representations of number	**Composition** ○ continue to explore the composition of 5 and practise recalling 'missing' or 'hidden' parts for 5 ○ explore the composition of 6, linking this to familiar patterns, including symmetrical patterns ○ begin to see that numbers within 10 can be composed of '5 and a bit'.	**Comparison** ○ continue to compare sets using the language of comparison, and play games which involve comparing sets ○ continue to compare sets by matching, identifying when sets are equal ○ explore ways of making unequal sets equal.	**Length and height** • Children begin to use language to describe length and height • When making direct comparisons, they may initially say something is bigger than something else. • Introduce more specific mathematical vocabulary – length (longer, shorter), height (taller, shorter) and breadth (wider, narrower) **Time** • Children continue to order and sequence important times in their day and use language such as now, before, later, soon, after, then and next to describe when events happen. • To begin to recognise that regular events happen on the same day each week and use the vocabulary 'yesterday', 'today' and 'tomorrow' to describe when events happen. • To describe significant events in their lives and talk about events they are looking forward to.	N/A	  

	○ Spots patterns in the environment, beginning to identify the pattern "rule" ○ Chooses familiar objects to create and recreate repeating patterns beyond AB patterns and begins to identify the unit of repeat **Measures** ○ Enjoys tackling problems involving prediction and discussion of comparisons of length, weight or capacity, paying attention to fairness and accuracy ○ Becomes familiar with measuring tools in everyday experiences and play ○ Is increasingly able to order and sequence events using everyday language related to time ○ Beginning to experience measuring time with timers and calendars							
Term 4	**Range 6** (48 months – 71 months: 4 years old – almost 6 years old) ***Consolidating*** See above.	**Subitising** ○ explore symmetrical patterns, in which each side is a familiar pattern, linking this to 'doubles'.	**Cardinality, ordinality and counting** ○ continue to consolidate their understanding of cardinality, working with larger numbers within 10 ○ become more familiar with the counting pattern beyond 20.	**Composition** ○ explore the composition of odd and even numbers, looking at the 'shape' of these numbers ○ begin to link even numbers to doubles ○ begin to explore the composition of numbers within 10.	**Comparison** ○ compare numbers, reasoning about which is more, using both an understanding of the 'howmanyness' of a number, and its position in the number system.	**3D shape** • Children will naturally explore and manipulate 3-D shapes through their block play and modelling • Opportunities to build using a variety of shapes and to construct their own 3-D shapes in different ways. • Introduce name of shapes and be given opportunities to explore similarities and differences between them as they play and to sort them according to what they notice. **Pattern** • Build on the children's earlier AB pattern word by introducing more complex patterns. • Children explore patterns which use items more than once in each repeat for example ABB, AAB, AABB, AABBB. • Encourage children to say the pattern aloud and to create patterns around the edge of shapes as well as in straight lines.	• Knows that pairs of quantities can be combined to make bigger quantities, within 5 • Count objects, actions and sounds up to 10 • Can describe, copy and create a 2-part pattern • Use language of comparison in measurements	  
Term 5	**Range 6** (48 months – 71 months: 4 years old – almost 6 years old) ***Secure*** See above.	**Subitising** ○ continue to practise increasingly familiar subitising arrangements, including those which expose '1 more' or 'doubles' patterns	**Cardinality, ordinality and counting** ○ continue to develop verbal counting to 20 and beyond, including counting from different	**Composition** ○ explore the composition of 10.	**Comparison** ○ order sets of objects, linking this to their understanding of the ordinal number system.	**Spatial reasoning** • Children understand that shapes can be combined and separated to make new shapes. • Provide opportunities for the children to fit shapes together and break shapes apart and to notice the new shapes they have created. • Investigate how many different ways a given shape can be built using smaller shapes.	N/A	

		○ use subitising skills to enable them to identify when patterns show the same number but in a different arrangement, or when patterns are similar but have a different number ○ subitise structured and unstructured patterns, including those which show numbers within 10, in relation to 5 and 10 ○ be encouraged to identify when it is appropriate to count and when groups can be subitised.	starting numbers ○ continue to develop confidence and accuracy in both verbal and object counting.			• Encourage the children to explore the different shapes they can make by combining a set of give shapes in different ways.		 
Term 6	**Early Learning Goal** **Mathematics:** **Number ELG** Children at the expected level of development will: ○ Have a deep understanding of number to 10, including the composition of each number ○ Subitise (recognise quantities without counting) up to 5 ○ Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts. **Numerical Patterns ELG** Children at the expected level of development will:	In this half-term, the children will consolidate their understanding of concepts previously taught through working in a variety of contexts and with different numbers.				**Spatial reasoning** • Children understand that places and models can be replicated and need to experience looking at these from different positions. • Opportunities to replicate simple constructions, models, real places and places in stories. • Positional language to describe where objects are in relation to other items. • Encourage children to visualiser simple model by playing barrier games and providing verbal instructions for them to follow as they build. **Deepening understanding** • Children need time and opportunities to engage in extended problem solving and develop their critical thinking skills. **Patterns and relationships** • Children should be given opportunities to explore and investigate relationships between numbers and shapes. • Continue to copy, continue and create a widening range of repeating patterns and symmetrical constructions. **Spatial reasoning** • Children understand that we can make maps and plans to	See ELG CLF EYFS Data input	  

	○ Verbally count beyond 20, recognising the pattern of the counting system ○ Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity ○ Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.		represent places and use these to see where things are in relation to other things. • Create own maps and represent models they build.		